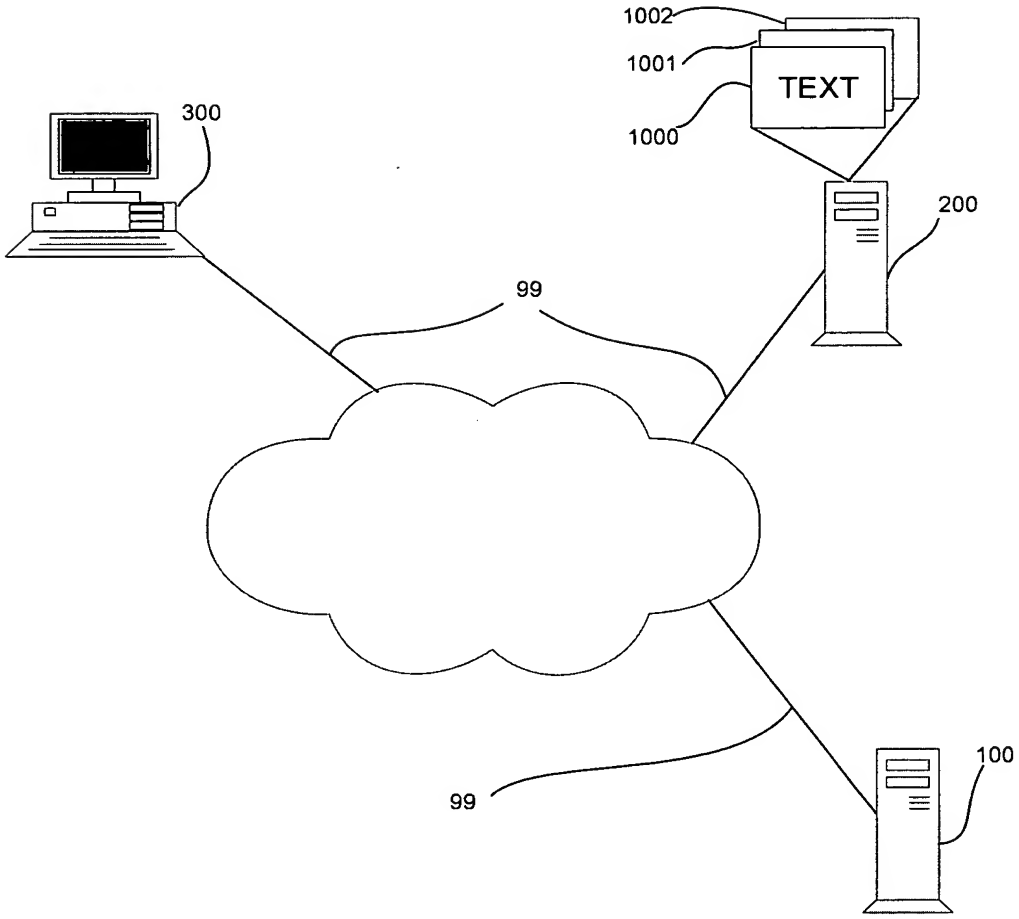

FIG. 1

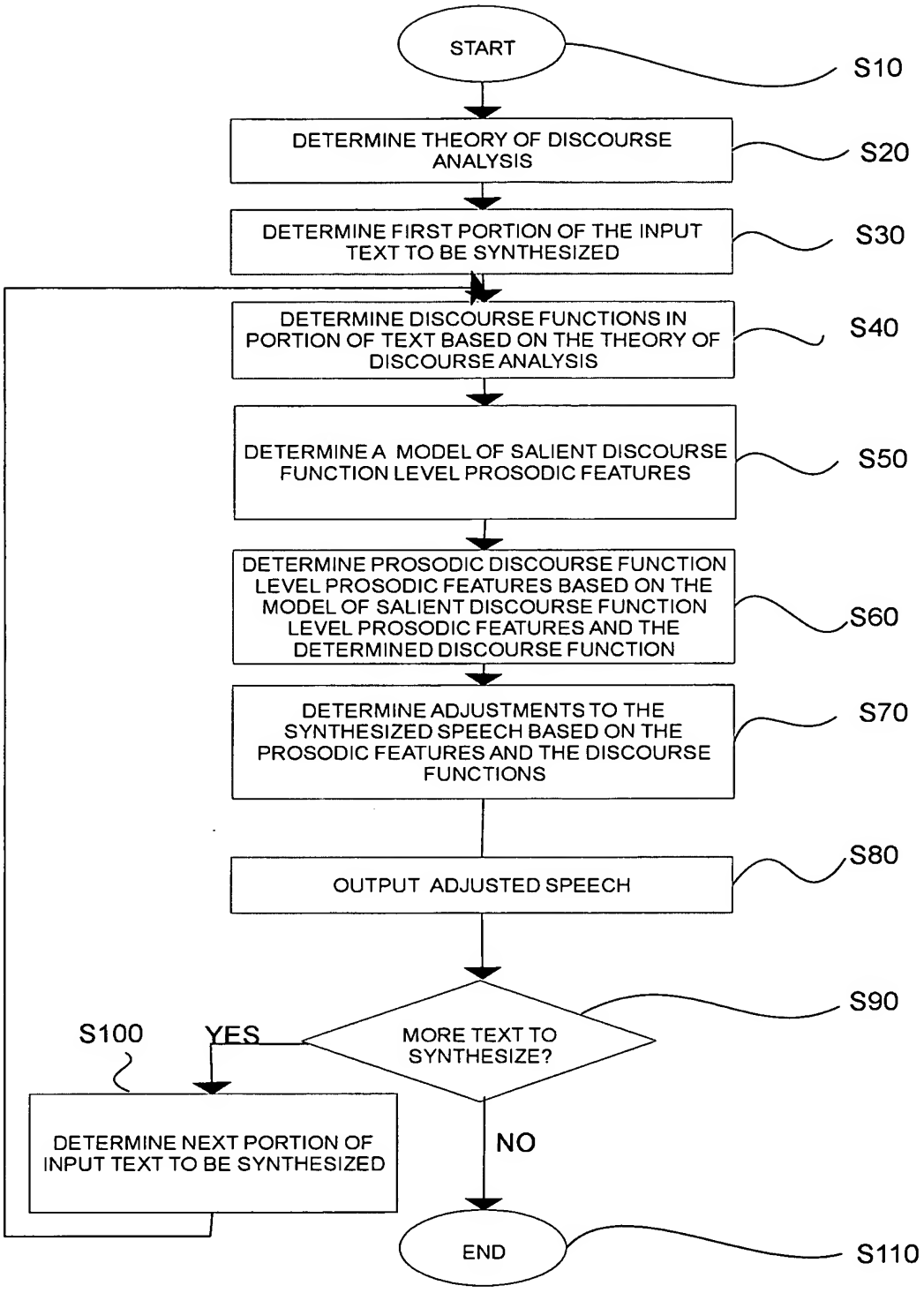
START
S10
DETERMINE THEORY OF DISCOURSE ANALYSIS
S20
DETERMINE FIRST PORTION OF THE INPUT TEXT TO BE SYNTHESIZED
S30
DETERMINE DISCOURSE FUNCTIONS IN PORTION OF TEXT BASED ON THE THEORY OF DISCOURSE ANALYSIS
S40
DETERMINE A MODEL OF SALIENT DISCOURSE FUNCTION LEVEL PROSODIC FEATURES
S50
DETERMINE PROSODIC DISCOURSE FUNCTION LEVEL PROSODIC FEATURES BASED ON THE MODEL OF SALIENT DISCOURSE FUNCTION LEVEL PROSODIC FEATURES AND THE DETERMINED DISCOURSE FUNCTION
S60
DETERMINE ADJUSTMENTS TO THE SYNTHESIZED SPEECH BASED ON THE PROSODIC FEATURES AND THE DISCOURSE FUNCTIONS
S70
OUTPUT ADJUSTED SPEECH
S80
MORE TEXT TO SYNTHESIZE?
S90
YES
S100
NO
DETERMINE NEXT PORTION OF INPUT TEXT TO BE SYNTHESIZED
END
S110

FIG. 2

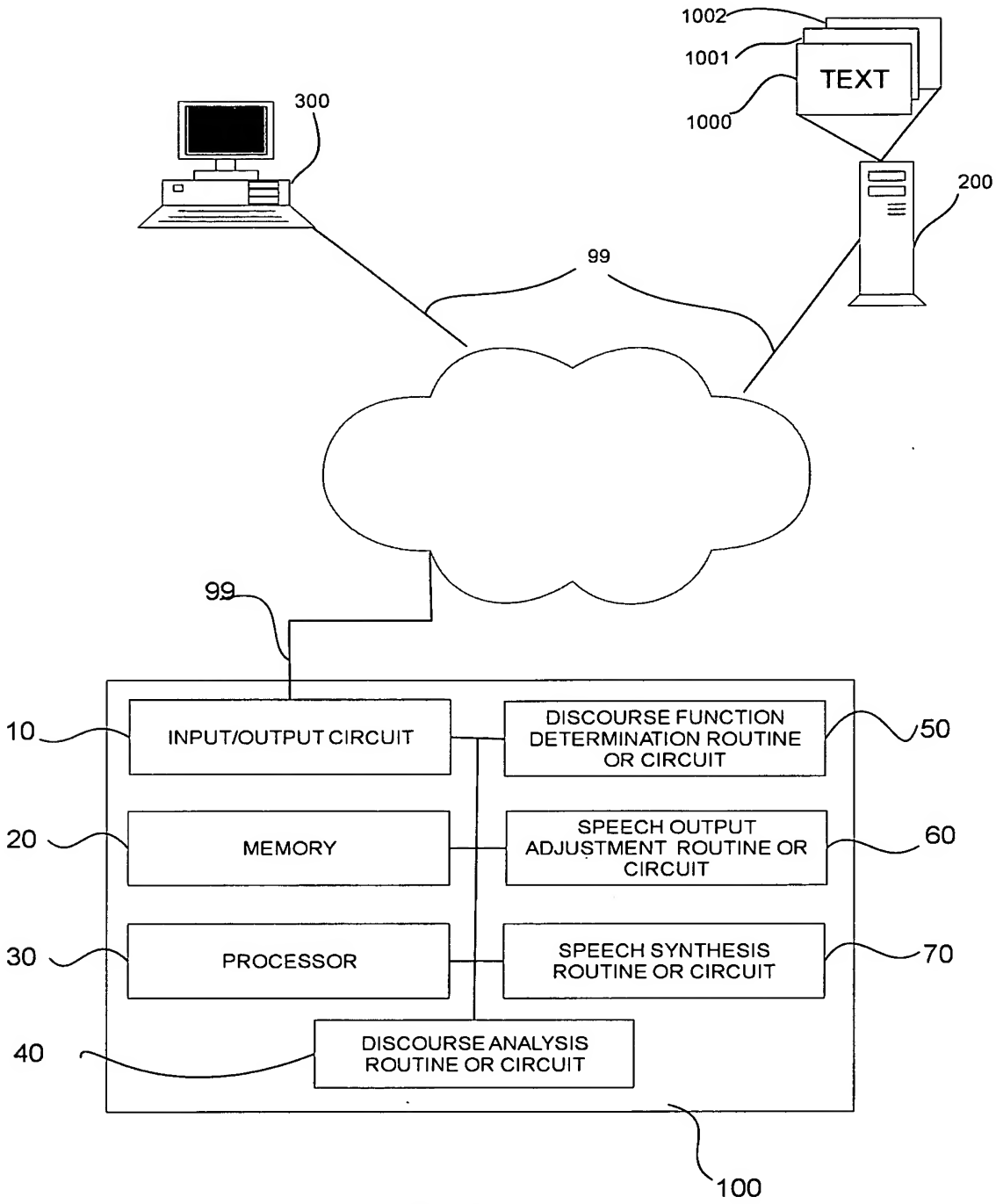
1002
1001
TEXT
1000
300
200
99
99
10
INPUT/OUTPUT CIRCUIT
DISCOURSE FUNCTION DETERMINATION ROUTINE OR CIRCUIT
50
20
MEMORY
SPEECH OUTPUT ADJUSTMENT ROUTINE OR CIRCUIT
60
30
PROCESSOR
SPEECH SYNTHESIS ROUTINE OR CIRCUIT
70
40
DISCOURSE ANALYSIS ROUTINE OR CIRCUIT
100

FIG. 3

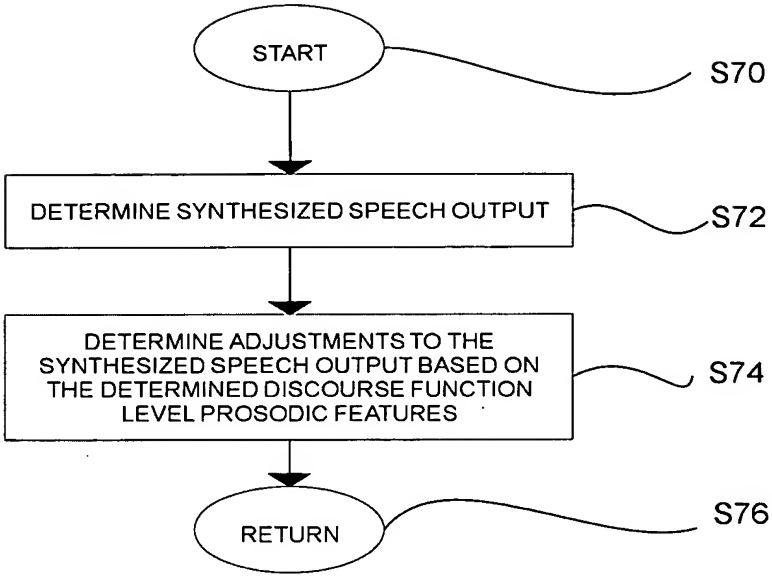
START
S70
DETERMINE SYNTHESIZED SPEECH OUTPUT
S72
DETERMINE ADJUSTMENTS TO THE SYNTHESIZED SPEECH OUTPUT BASED ON THE DETERMINED DISCOURSE FUNCTION LEVEL PROSODIC FEATURES
S74
RETURN
S76

FIG. 4

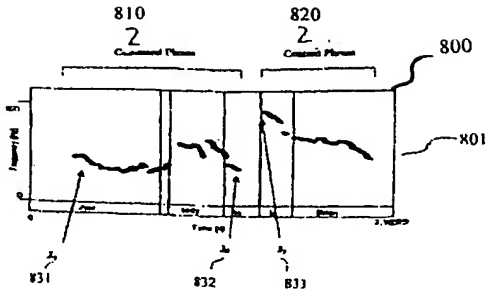

Fig. 5

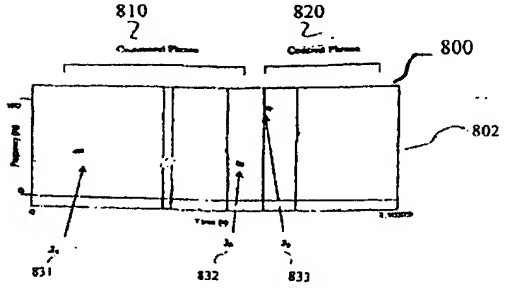

Fig. 9

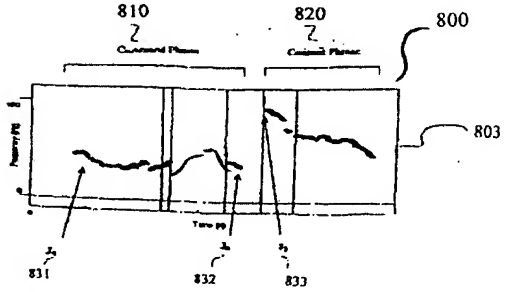

Fig. 10

500

DISCOURSE FUNCTION IDENTIFIER	INTONATIONAL BOUNDARIES	INITIAL PITCH FREQUENCY	DELTA PITCH FREQUENCY	BOUNDARY STRESS	SILENCE DURATION
COMMAND	3	75	120	3	0.3
COORDINATION	2	90	75	2	0.1
DATA	2	160	80	1	0.3
N-ARY	2	65	40	2	0.1
SUBORDINATION	2	110	55	3	0.20
...	...	...	...	...	...

505 510 520 530 540 550

Fig. 6

600

DISCOURSE FUNCTION IDENTIFIER	PREDICTIVE FEATURES	AUGMENTED FEATURES

505 610 620

Fig. 7

720

DISCOURSE FUNCTION IDENTIFIER	PROSODIC FEATURE VECTOR
COMMAND	J_1+J_2
DATA	J_3
REPAIR	$J_8+J_9+J_{10}$
COORDINATION	$J_{11}+J_{12}+J_{13}$

505 710

Fig. 8

PROSODIC FEATURE		PROSIDIC VALUE
J[1].pitch_Frequency	=	75
J[1].silence_Following	=	Nil
J[1].silence_Preceding	=	0.25
J[1].silence_Volume	=	10
J[1].Time	=	0.25
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.

1110 1100 1120

Fig. 12

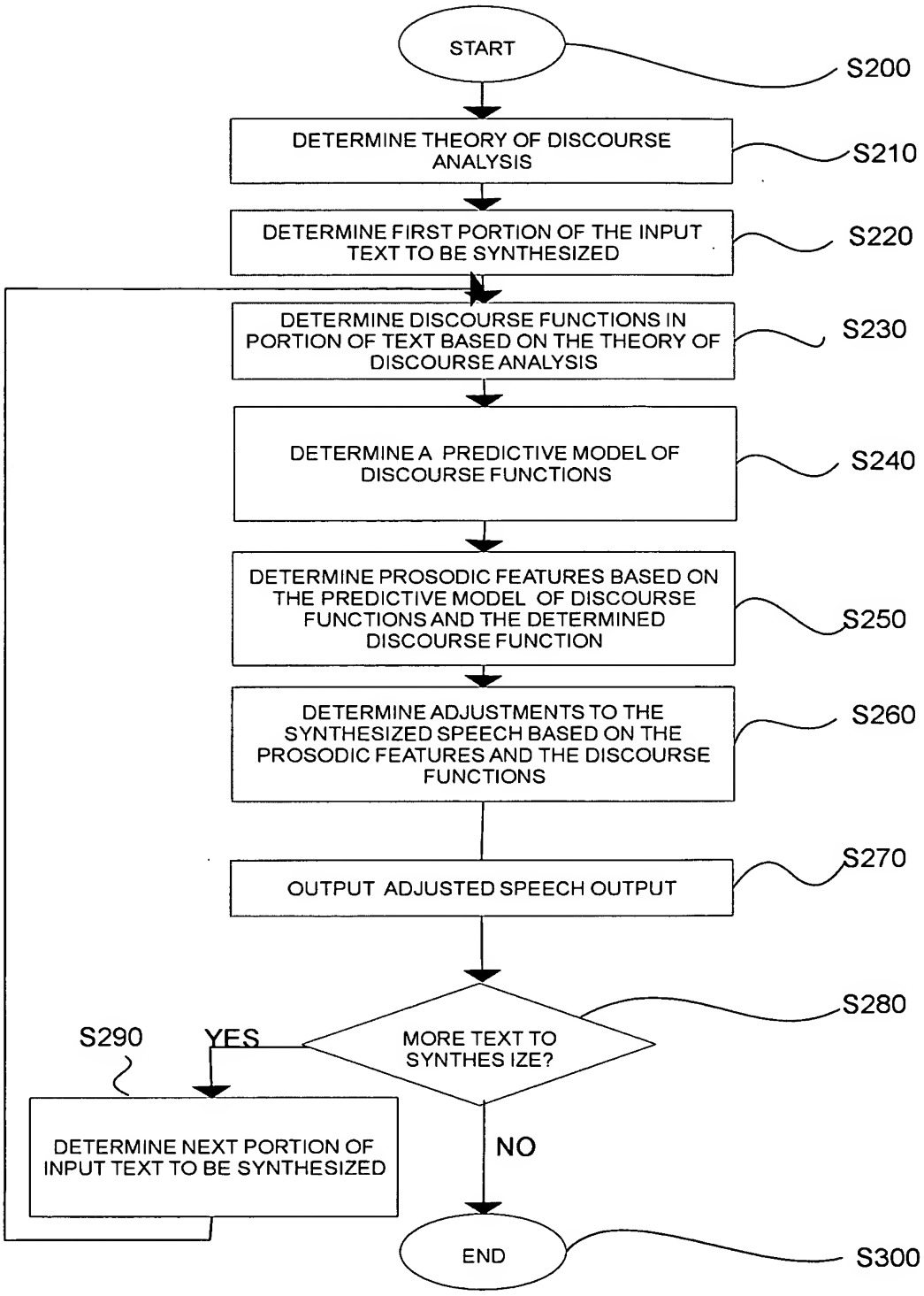
START
S200
DETERMINE THEORY OF DISCOURSE ANALYSIS
S210
DETERMINE FIRST PORTION OF THE INPUT TEXT TO BE SYNTHESIZED
S220
DETERMINE DISCOURSE FUNCTIONS IN PORTION OF TEXT BASED ON THE THEORY OF DISCOURSE ANALYSIS
S230
DETERMINE A PREDICTIVE MODEL OF DISCOURSE FUNCTIONS
S240
DETERMINE PROSODIC FEATURES BASED ON THE PREDICTIVE MODEL OF DISCOURSE FUNCTIONS AND THE DETERMINED DISCOURSE FUNCTION
S250
DETERMINE ADJUSTMENTS TO THE SYNTHESIZED SPEECH BASED ON THE PROSODIC FEATURES AND THE DISCOURSE FUNCTIONS
S260
OUTPUT ADJUSTED SPEECH OUTPUT
S270
MORE TEXT TO SYNTHES IZE?
S280
YES
S290
NO
DETERMINE NEXT PORTION OF INPUT TEXT TO BE SYNTHESIZED
END
S300

FIG. 11